



## Material Safety Data Sheet

Creation Date 12-Feb-2010

Revision Date 05-Feb-2013

Revision Number 2

### 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	Xylenes, mixed isomers with ethylbenzene
<b>Cat No.</b>	S71233; X3-F1GAL; X3-P1GAL; X3RB-50; X3S-4; X3S-20; X3S-200; X4-4; X4-20; X4-P1GAL; X5-1; X5-4; X5-20; X5-200; X5-500; X5FB-19; X5FB-50; X5FB-115; X5FB-200; X5FB-P1GAL; X5RB-50; X5RB-115; X5RB-200; X5RS-19; X5RS-28; X5RS-50; X5RS-115; X5RS-200; X5S-4; X5SK-4; X5SS-28; X5SS-50; X5SS-115; X5SS-200; X16-4; HC7001GAL; 22-110-676
<b>Synonyms</b>	Xylo; Methyltoluene.; Dimethylbenzene (Histological/Laboratory/Certified ACS/Scintanalyzed)
<b>Recommended Use</b>	Laboratory chemicals
<b>Company</b>	<b>Emergency Telephone Number</b>
Fisher Scientific	CHEMTREC®, Inside the USA: 800-424-9300
One Reagent Lane	CHEMTREC®, Outside the USA: 001-703-527-3887
Fair Lawn, NJ 07410	
Tel: (201) 796-7100	

### 2. HAZARDS IDENTIFICATION

#### WARNING!

#### Emergency Overview

Flammable liquid and vapor. Possible cancer hazard. May cause cancer based on animal data. Harmful if absorbed through skin or if inhaled. Causes eye, skin, and respiratory tract irritation. Inhalation may cause central nervous system effects. Aspiration hazard if swallowed - can enter lungs and cause damage.

**Appearance** Clear

**Physical State** Liquid

**Odor** aromatic

**Target Organs** Central nervous system (CNS), Eyes, Respiratory system, Skin, Liver, Kidney, Blood

#### Potential Health Effects

#### Acute Effects

#### Principle Routes of Exposure

**Eyes**  
**Skin**

Irritating to eyes.  
Harmful in contact with skin. Irritating to skin. Prolonged skin contact may defat the skin and produce dermatitis.

**Inhalation**

Harmful by inhalation. Irritating to respiratory system. Inhalation may cause central nervous system effects.

**Ingestion**

Aspiration hazard. May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Chronic Effects** Possible cancer hazard based on tests with laboratory animals. Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects. May cause adverse kidney effects. Prolonged skin contact may defat the skin and produce dermatitis.

See Section 11 for additional Toxicological information.

**Aggravated Medical Conditions** Central nervous system disorders. Preexisting eye disorders. Skin disorders.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Haz/Non-haz**

Component	CAS-No	Weight %
Xylenes (o-, m-, p- isomers)	1330-20-7	96
Ethyl benzene	100-41-4	4

### 4. FIRST AID MEASURES

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

**Inhalation** Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Obtain medical attention.

**Ingestion** Do not induce vomiting. Obtain medical attention.

**Notes to Physician** Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Flash Point** 25.6 - 32.2°C / 78.1 - 90°F

**Method -** No information available.

**Autoignition Temperature** 527°C / 980.6°F

**Explosion Limits**

**Upper** 7.0 vol %

**Lower** 1.1 vol %

**Suitable Extinguishing Media** CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

**Unsuitable Extinguishing Media** Water may be ineffective

**Hazardous Combustion Products** No information available.

**Sensitivity to mechanical impact** No information available.

**Sensitivity to static discharge** No information available.

**Specific Hazards Arising from the Chemical**

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

**NFPA**                      **Health** 2                      **Flammability** 3                      **Instability** 0                      **Physical hazards** N/A

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions**                      Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing.

**Environmental Precautions**                      Should not be released into the environment.

**Methods for Containment and Clean Up**                      Remove all sources of ignition. Soak up with inert absorbent material. Take precautionary measures against static discharges. Keep in suitable, closed containers for disposal..

**7. HANDLING AND STORAGE**

**Handling**                      Use only under a chemical fume hood. Wear personal protective equipment. Use explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing.

**Storage**                      Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Measures

Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

### Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Xylenes (o-, m-, p- isomers)	TWA: 100 ppm STEL: 150 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 435 mg/m <sup>3</sup> (Vacated) STEL: 150 ppm (Vacated) STEL: 655 mg/m <sup>3</sup> TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	
Ethyl benzene	TWA: 100 ppm STEL: 125 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 435 mg/m <sup>3</sup> (Vacated) STEL: 125 ppm (Vacated) STEL: 545 mg/m <sup>3</sup> TWA: 100 ppm TWA: 435 mg/m <sup>3</sup>	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Xylenes (o-, m-, p- isomers)	TWA: 100 ppm TWA: 434 mg/m <sup>3</sup> STEL: 150 ppm STEL: 651 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 150 ppm STEL: 655 mg/m <sup>3</sup>	TWA: 100 ppm STEL: 150 ppm
Ethyl benzene	TWA: 100 ppm TWA: 434 mg/m <sup>3</sup> STEL: 125 ppm STEL: 543 mg/m <sup>3</sup>	TWA: 100 ppm TWA: 435 mg/m <sup>3</sup> STEL: 125 ppm STEL: 545 mg/m <sup>3</sup>	TWA: 100 ppm STEL: 125 ppm

**NIOSH IDLH:** Immediately Dangerous to Life or Health

### Personal Protective Equipment

#### Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

#### Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

#### Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Liquid
<b>Appearance</b>	Clear
<b>Odor</b>	aromatic
<b>Odor Threshold</b>	No information available.
<b>pH</b>	Not applicable
<b>Vapor Pressure</b>	8.29 mmHg @ 25 °C
<b>Vapor Density</b>	(Air = 1.0)
<b>Viscosity</b>	No information available.
<b>Boiling Point/Range</b>	136 - 140°C / 276.8 - 284°F
<b>Melting Point/Range</b>	-34°C / -29.2°F
<b>Decomposition temperature</b>	No information available.
<b>Flash Point</b>	25.6 - 32.2°C / 78.1 - 90°F
<b>Evaporation Rate</b>	(Butyl Acetate = 1.0)
<b>Specific Gravity</b>	0.865 (H <sub>2</sub> O=1)
<b>Solubility</b>	Insoluble in water

9. PHYSICAL AND CHEMICAL PROPERTIES

log Pow No data available  
 Molecular Weight 106.17  
 Molecular Formula C8H10

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions.  
 Conditions to Avoid Incompatible products. Heat, flames and sparks.  
 Incompatible Materials Strong oxidizing agents, Strong acids  
 Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Aldehydes, Hydrocarbons  
 Hazardous Polymerization Hazardous polymerization does not occur  
 Hazardous Reactions . None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Xylenes (o-, m-, p- isomers)	4300 mg/kg ( Rat )	1700 mg/kg ( Rabbit )	29.08 mg/L [MOE Risk Assessment Vol.1, 2002]
Ethyl benzene	3500 mg/kg ( Rat )	15354 mg/kg ( Rabbit )	17.2 mg/L ( Rat ) 4 h

Irritation Irritating to eyes, respiratory system and skin

Toxicologically Synergistic Products No information available.

Chronic Toxicity

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH	IARC	NTP	OSHA	Mexico
Ethyl benzene	A3	Group 2B	Not listed	X	Not listed

ACGIH: (American Conference of Governmental Industrial Hygienists)

- A1 - Known Human Carcinogen
- A2 - Suspected Human Carcinogen
- A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)

- IARC: (International Agency for Research on Cancer)
- Group 1 - Carcinogenic to Humans
- Group 2A - Probably Carcinogenic to Humans
- Group 2B - Possibly Carcinogenic to Humans

Sensitization No information available.

<b>Mutagenic Effects</b>	No information available.
<b>Reproductive Effects</b>	Experiments have shown reproductive toxicity effects on laboratory animals.
<b>Developmental Effects</b>	Developmental effects have occurred in experimental animals.
<b>Teratogenicity</b>	Teratogenic effects have occurred in experimental animals..
<b>Other Adverse Effects</b>	See actual entry in RTECS for complete information.
<b>Endocrine Disruptor Information</b>	No information available

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Xylenes (o-, m-, p- isomers)	Not listed	7.711-9.591 mg/L LC50 96 h 30.26-40.75 mg/L LC50 96 h 23.53-29.97 mg/L LC50 96 h 2.661-4.093 mg/L LC50 96 h 13.5-17.3 mg/L LC50 96 h 13.1-16.5 mg/L LC50 96 h 780 mg/L LC50 96 h 19 mg/L LC50 96 h 13.4 mg/L LC50 96 h	EC50 = 0.0084 mg/L 24 h	0.6 mg/L LC50 = 48 h 3.82 mg/L EC50 = 48 h
Ethyl benzene	1.7 - 7.6 mg/L EC50 96 h 2.6 - 11.3 mg/L EC50 72 h 4.6 mg/L EC50 = 72 h 438 mg/L EC50 > 96 h	9.6 mg/L LC50 96 h 11.0-18.0 mg/L LC50 96 h 7.55-11 mg/L LC50 96 h 9.1-15.6 mg/L LC50 96 h 32 mg/L LC50 96 h 4.2 mg/L LC50 96 h	EC50 = 9.68 mg/L 30 min EC50 = 96 mg/L 24 h	1.8 - 2.4 mg/L EC50 48 h

**Persistence and Degradability** No information available

**Bioaccumulation/ Accumulation** No information available

### Mobility

Component	log Pow
Xylenes (o-, m-, p- isomers)	3.15
Ethyl benzene	3.118

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Xylenes (o-, m-, p- isomers) - 1330-20-7	U239	-

## 14. TRANSPORT INFORMATION

### DOT

**UN-No** UN1307

**14. TRANSPORT INFORMATION**

**Proper Shipping Name** XYLENES  
**Hazard Class** 3  
**Packing Group** III

**TDG**

**UN-No** UN1307  
**Proper Shipping Name** XYLENES  
**Hazard Class** 3  
**Packing Group** III

**IATA**

**UN-No** UN1307  
**Proper Shipping Name** XYLENES  
**Hazard Class** 3  
**Packing Group** III

**IMDG/IMO**

**UN-No** UN1307  
**Proper Shipping Name** XYLENES  
**Hazard Class** 3  
**Packing Group** III

**15. REGULATORY INFORMATION**

**International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Xylenes (o-, m-, p- isomers)	X	X	-	215-535-7	-		X	X	X	X	X
Ethyl benzene	T	X	-	202-849-4	-		X	X	X	X	X

**Legend:**

- X - Listed
- E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
- F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- P - Indicates a commenced PMN substance
- R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
- T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
- XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).
- Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
- Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

TSCA 12(b) Not applicable

**SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Xylenes (o-, m-, p- isomers)	1330-20-7	96	1.0
Ethyl benzene	100-41-4	4	0.1

**SARA 311/312 Hazardous Categorization**

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

**Clean Water Act**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Xylenes (o-, m-, p- isomers)	X	100 lb	-	-
Ethyl benzene	X	1000 lb	X	X

**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Xylenes (o-, m-, p- isomers)	X		-
Ethyl benzene	X		-

**OSHA**

Not applicable

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Xylenes (o-, m-, p- isomers)	100 lb	-
Ethyl benzene	1000 lb	-

**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL
Ethyl benzene	100-41-4	Carcinogen	54 µg/day 41 µg/day

**State Right-to-Know**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Xylenes (o-, m-, p- isomers)	X	X	X	X	X
Ethyl benzene	X	X	X	X	X

**U.S. Department of Transportation**

Reportable Quantity (RQ):	Y
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N



**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade Serious risk, Grade 3

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS Hazard Class**

B2 Flammable liquid  
D2A Very toxic materials  
D2B Toxic materials



**16. OTHER INFORMATION**

**Prepared By** Regulatory Affairs  
Thermo Fisher Scientific  
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**Creation Date** 12-Feb-2010

**Print Date** 05-Feb-2013

**Revision Summary** "\*\*\*\*", and red text indicates revision

**Disclaimer**

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of MSDS**